

*Pinsker, B. E.*

Pinsker, A. O. On separable K-spaces. C. R. (Dokl.)  
Acad. Sci. URSS (N.S.) 49, 318-319 (1945).

Several results concerning the representation of separable K-spaces are stated without proof. The following theorem is typical: Every separable K-space  $X$  may be represented as a disjunctive sum  $X = \sum_t S_t + \sum_i s_i$ , where the power of the set of summands is less than the power of the continuum and where  $S_t$  is contained in the space of measurable functions on  $(0, 1)$  and  $s_i$  is contained in the space of numerical sequences.

*N. Dunford* (New Haven, Conn.).

Source: Mathematical Reviews,

Vol. No.

HINSKER, A.G.

Pinsker, A. G. Completely linear functionals in K-spaces.

S. I. (Doklady) Acad. Sci. URSS (N.S.) 55, 299-302  
(1947).

Let  $X$  be a partially ordered linear space. The author defines convergence for transfinite sequences of elements of  $X$  by generalizing the  $\limsup - \liminf$  criterion for convergence of ordinary sequences of real numbers. He then defines an additive functional  $f$  on  $X$  to be completely linear if  $f(\lim x_i) = \lim f(x_i)$  for every convergent transfinite sequence  $x_i$ . A modification of this definition in which infinite values are allowed and  $f(x)$  is not required to have a value for all  $x$  leads to the notion of generalized completely linear functional. The author gives an example of a linear functional which is not completely linear and states without proof a number of theorems dealing with the notions just described. These involve the existence of nontrivial completely linear and generalized completely linear functionals, the representation of functionals as sums of functionals of special kinds, etc. G. W. Mackey (Cambridge, Mass.).

16

8/10

Sources: Mathematical Reviews, 1948, Vol 9, No. 1

PINSKER, A. G.

"Completely Linear Functionals in K-Spaces," Dok. AN, 55, No 4, 1947

*pp. 303-306,*

PINKER, A. G.

"On Concrete Representations of Linear Semi-Ordered Spaces," Dok. AN, 55,  
No. 5, 1947 - *pp 383-386*

"APPROVED FOR RELEASE: 06/15/2000

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DATE: [REDACTED]

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APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3"

Kantorovič, L. V., Vulikh, B. Z., and Žuker, A. G. Funkcional'nyj analiz v poluuporядоченных пространствах [Functional Analysis in Partially Ordered Spaces]. Gosudarstv. Izdat. Tehn.-Teor. Lit., Moscow-Leningrad, 1950. 548 pp.

The volume under review contains an encyclopedic discussion of the theory of partially ordered linear spaces, as developed by Freudenthal [Akad. Wetensch. Amsterdam, Proc. 39, 541-651 (1935)], Kantorovič [e.g., C. R. (Doklady) Acad. Sci. URSS (N.S.) 12 (1936 III), 9-14; Rec. Math. Publ., v. 25, 2d ed., New York, 1948; these Rev. 10, 673.] The work is divided into an introduction, thirteen chapters, and two appendices. In the introduction there is an extended historical sketch in which the work of non-Soviet mathematicians in the field of functional analysis is covered in seven lines. The scientific portion of the book has as its basic object the study of complete vector lattices. Such spaces are here referred to as K-spaces [nomenclature introduced by Pinsker according to the authors]. The authors change their axioms whenever convenient, and succeed in defining, in the course of the exposition, no fewer than twenty different types of vector lattices. Chapter I deals with the elementary properties of K-spaces. Great numbers of identities involving " $\vee$ ", " $\wedge$ ", " $+$ ", " $-$ ", and " $\cdot$ " are proved; o-convergence and \*-convergence, here referred to as convergence, are defined and discussed, and a few standard examples of K-spaces are produced. In chapter II, certain special subspaces of K-spaces, called components, are introduced. A linear subspace E of a K-space X is called a component if  $x \in E$ ,  $y \in X$ , and  $|x| \geq |y|$  imply  $y \in E$ , and if E contains the suprema in X of all subsets of E which are bounded above in X. It is shown that every K-space X is in a certain sense a subdirect sum of pair-wise lattice disjoint components. Chapter III presents Freudenthal's results [loc. cit.] on integral representation of elements of K-spaces, here considerably extended. A theorem of G. Birkhoff [Proc. Natl. Acad. Sci. U. S. A. 24, 154-159 (1938)], to the effect that the set of all components of a K-space is a complete Boolean algebra, is also proved. In chapter IV, we find results, in part new, concerning extensions of K-spaces. It is first shown that any complete Boolean algebra can serve as the Boolean algebra of components of a K-space. This is done by a construction introduced by Kakutani [Ann. of Math. (2) 42, 523-537 (1941); these Rev. 2, 318]. Next, it is shown that every K-space can be imbedded in another K-space having a certain strong completeness property. It is also shown that every such complete K-space admits a natural definition of multiplication for every pair of the-

Source: Mathematical Reviews

Vol. No. Cr

ments, making it a commutative and associative algebra over the real field. Chapters V and VI treat  $K$ -spaces in which various additional axioms are supposed satisfied, such as the existence of a metric, a norm, etc. Chapter VII deals with additive homogeneous operators carrying a given  $K$ -space into another. Four types of continuity are defined and studied in great detail; and as one would expect, the set of all operators continuous in a certain sense is shown to be a  $K$ -space. Chapter VIII presents representation theorems for various additive, homogeneous, and continuous operators. The usual integral representations for linear functionals on spaces of continuous real functions,  $L^p$ ,  $L_1$ , etc., are shown to have their abstract analogues. A large number of special examples are worked out. Chapter IX begins with an obvious analogue of the Hahn-Banach theorem for mappings of any linear space into a  $K$ -space, and proceeds to a long collection of theorems dealing with extensibility of operators of various kinds, with the preservation of various properties. The Daniell construction of the Lebesgue integral (for the case of functions vanishing outside of bounded sets) from the Riemann integral for continuous functions appears as a very special case of one of these extension theorems. A noteworthy fact is that Lebesgue's theorems on term-by-term integration are already contained in the general theorem employed. The classical moment problems for the line and for bounded intervals are also solved by application of the same general theorem. Chapters X, XI, and XII deal with convergence of sequences of additive, homogeneous, and continuous operators, with operators continuous in a certain strong sense, and with application of these results to integral and differential

Vol. 18 No. 5

Source: Mathematical Reviews.

equations. Here the principal tools are a number of fixed point theorems for abstract operators. Chapter XIII presents a survey of the known results concerning the concrete representation of  $K$ -spaces, as well as some new facts concerning such representations. For example, it is shown that every  $K$ -space can be represented as a linear subspace of the space of (possibly infinite-valued) real continuous functions on a certain extremely disconnected compact Hausdorff space. The linear subspace in question contains with  $x$  all  $y$  such that  $|y| \leq |x|$ . It is also shown that  $K$ -spaces of other types are really spaces  $L_1$  for suitable measure spaces [see Kakutani, loc. cit.]

Reviewer's remarks: This book seems to suffer from a number of shortcomings. First, as to omissions. Nowhere is there given a definition of the weak topology, about which assuredly some interesting facts could be established. Moore-Smith limits in  $K$ -spaces, which are surely a natural device, have been ignored. Furthermore, the concrete examples presented are all of a perfectly standard kind, providing little real illumination for the general theory expounded. Second, the proliferation of definitions and axiom systems is so great that concentrated attention is required to keep track of what has been proved and under what restrictions. Third, the applications to analysis, which are stated to be the great achievement of the theory, seem for the most part quite standard. Most of the proofs, an extensibility and fixed points appear to be obtained by restating known proofs from classical analysis in a form amenable to  $K$ -spaces. It appears that no important new analytic facts have been obtained. The typography is excellent, and only a few trivial misprints were detected by the reviewer.

E. Hille (Seattle, Wash.)

PINSKER, A.G.

USSR/Mathematics - Modern Algebra, Semi-Ordered Groups and Spaces May Jun 51

"Semi-Ordered Groups and Linear Semi-Ordered Spaces," L.V. Kantorovich, B.L. Lifshitz,  
A.G. Pinsker

"Uspekhi Matemat Nauk" Vol VI, No 3 (43), pp 31-98

Considers K-groups, their definition and properties; convergence to K-groups; expansion of K-groups into components; widening of K-groups; K-spaces and K-linears; immersion of K-group into K-space; integral representation of elements of K-space with unity; construction of continuous functions in K-spaces, and multiplication of elements; regular K-spaces and K-groups; normed K-spaces; regular operators in K-groups and K-spaces; linear operators; completely linear functionals; conjugate spaces; extension of operators; sequences of operators, and ergodic theorems; integral representation of operators; application to functional eqs; representation of K-spaces by means of continuous functions; representation of K-spaces by means of measurable functions. Finally considers certain problems. Cites extensive literature.

188T55

PINSKER, A.G.

Semiordered enumerable groups. Uch. zap. Ped. inst. Gerts. 89:9-16  
'53. (MIR 11:3)  
(Groups, Theory of)

PINSKER, A.O.

Regular and entirely regular semiordered groups. Uch. zap. Ped.  
inst. Gerts. 89:19-35 '53. (MIRA 11:3)  
(Groups, Theory of)

PINSKER, A. G.

USSR/Mathematics - Partly-ordered sets

Card 1/1 Pub. 22 - 4/45

Authors : Pinsker, A. G.

Title : Structures equivalent to the K-spaces

Periodical : Dok. AN SSSR 99/4, 503-505, Dec 1, 1954

Abstract : Necessary and sufficient conditions are sought under which a partly-ordered set would be isometric to the K-space. A definition of the K-space as well as some necessary concepts are presented. One Russian reference (1950).

Institution : The All-Union Higher Finance School

Presented by: Academician V. I. Smirnov, September 22, 1954

USSR/Mathematics

Card 1/1 Pub. 22 - 3/56

Authors : Pinsker, A. G.

Title : On the conditions of equivalence between Banach's and the L-spaces

Periodical : Dok. AN SSSR 99/5, 677-679, Dec 11, 1954

Abstract : Necessary and sufficient conditions are sought under which a class of positive elements satisfying all axioms of the L-space can be isolated in Banach's space. Five references 2-USSR (1941-1952).

Institution : The All-Union Higher Finance School

Presented by: Academician V. I. Smirnov, September 22, 1954

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow  
Jun-Jul- '56, Trudy '56, v. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.  
Pinsker, A. G. (Leningrad). Locally Ordered Groups.

32-33

Plotkin, B. I. (Sverdlovsk). Radical and Semi-Simple Groups  
and Lie Algebras.

33

There are 2 references, both of them USSR.

Pyatetskii-Shapiro, I. I. (Moscow). Modular Functions  
of Several Variables.

33

Sadovskii, L. Ye. (Moscow). Subgroup Lattice of  
Nilpotent Torsion Free Group.

33-34

Mention is made of Kontorovich, P. G. and Plotkin, B. I.

There is 1 USSR reference.

Skornyakov, L. A. (Moscow). T-homomorphisms of Rings and  
Non-associative Free Fields.

34-35

Card 11/80

Pinsker, A.G.

Pinsker, A. G. On representation of a K-space as a ring  
of self-adjoint operators. Dokl. Akad. Nauk SSSR  
(N.S.) 106 (1956), 195-196. (Russian)

For a set  $S$  of bounded self-adjoint operators on a Hilbert space  $H$ , let  $S'$  be the set of all bounded self-adjoint operators commuting with every operator in  $S$ . Suppose that  $S$  is a set of bounded, self-adjoint, mutually commuting operators. Then the ring  $S''$ , under the usual ordering for self-adjoint operators, is a partially ordered vector space. Actually  $S''$  is a complete vector lattice, or K-space in the author's terminology (every bounded set admits a least upper bound). The author cites an unpublished 1934 dissertation of L. V. Lyubovin for this fact. However, it is a simple consequence of von Neumann's general theory of rings  $S''$  [Math. Ann. 102 (1929), 370-427] and Stone's representation theory for such rings [Proc. Nat. Acad. Sci. U.S.A. 26 (1940), 280-283; MR 1, 338]. Note that the partially ordered set of all self-

Engineered Engr.  
Economy Inst.

Pinsker, Ph.G.

adjoint bounded operators is not even a lattice. The present note characterizes intrinsically the  $K$ -spaces  $X$  that are algebraically and order-wise isomorphic to rings  $S''$ . Given a transfinite sequence  $\{x_\alpha\}$  of elements of  $X$ , one writes  $x_\alpha \rightarrow x$  if

$$\inf_{\alpha < \beta} [\sup_{\delta > \alpha} (x_\beta)] = \sup_{\alpha < \beta} [\inf_{\delta > \alpha} (x_\beta)] = x.$$

A linear functional  $f$  on  $X$  is said to be completely additive if  $x_\alpha \rightarrow x$  implies  $f(x_\alpha) \rightarrow f(x)$ . Then  $X$  is isomorphic to some ring  $S''$  if and only if for every  $x \neq 0$  in  $X$ , there is a completely additive functional  $f$  such that  $f(x) \neq 0$ .

E. Hewitt (Seattle, Wash.)

SUBJECT

USSR/MATHEMATICS/Functional analysis

CARD 1/2 PG - 781

AUTHOR

PINSKER A.G.

TITLE

Structural characterization of functional spaces.

PERIODICAL

Uspechi mat.Nauk 12, 1, 226-229 (1957)

reviewed 5/1957

Starting from the Birkhoff problem to enumerate the necessary and sufficient conditions that an abstract structure is the structure of all real-valued continuous functions on a compact Hausdorff space, the author investigates the structure of the functional spaces. A structure S is called symmetrical if

- 1) it has a dual automorphism  $a \rightarrow \rho(a) = -a$  which does not change the zero element 0,
- 2) for every element  $a \in S$  there holds the relation  $a_+ \wedge a_- = 0$ , where  $a_+$  is the positive part and  $a_- = -(a \wedge 0)$  is the negative part of a,
- 3) S is distributive,
- 4) from  $c \wedge d = 0$  ( $c, d \in S$ ) there follows that there exists an element  $a \in S$  such that  $a_+ = c$  and  $a_- = d$ .

Theorem: If P is an arbitrary distributive structure with the smallest element zero, then there exists a symmetric structure S being defined up to isomorphisms such that  $S^+$  (the totality of the positive elements of S) is

AKILOV, G.P.; VULIKH, B.Z.; GAVURIN, M.K.; ZALGALLER, V.A.; NATANSON,  
I.P.; PINSKER, A.G.; FADDEYEV, D.K.

Leonid Vital'evich Kantorovich; on his 50th birthday. Usp.  
mat.nauk 17 no.4:201-215 '62. (MIRA 15:8)  
(Kantorovich, Leonid Vital'evich, 1912-)

KORBUT, A.A.; KEMCHINOV, V.S., akademik, otv.red.; NOVOZHILOV, V.V.,  
red.; PINSKER, A.G., red.; SOKOLITSYN, S.A., red.; LUCHKINA, A.N.,  
red.izd-va; SHIVCHENKO, G.N., tekhn.red.

[Transactions of the Scientific Conference on the Use of  
Mathematical Methods in Economic Research and Planning] Trudy  
Nauchnogo soveshchaniia o primenenii matematicheskikh metodov  
v ekonomicheskikh issledovaniakh i planirovani. Moskva,  
Izd-vo Akad.nauk SSSR. Vol.6.[Use of mathematical methods in  
technical and economic calculations] Matematicheskie metody  
v tekhniko-ekonomicheskikh raschetakh. 1961. 166 p.

(MIRA 15:2)

1. Nauchnoye soveshchaniye o primenenii matematicheskikh metodov  
v ekonomicheskikh issledovaniyakh i planirovani, Moscow, 1960.
2. Leningradskoye otdeleniye Matematicheskogo instituta AN SSSR  
(for Korbut). 3. Leningradskiy politekhnicheskiy institut (for  
Sokolitsyn).

(Mathematical statistics) (Electronic calculating machines)  
(Industrial management)

PINSKIER, A.L., inzh.

Longitudinal orientation of billets in turning stepped shafts.  
Trakt. i sel'khozmash. 30 no.11:37-39 N '60. (MIRA 13:12)

1. Nauchno-issledovatel'skiy institut Traktorsel'khozmash.  
(Turning)

PINSKER, A. Ye.

Kinetics of the vapor-phase dealkylation of polyethyl benzenes  
over aluminosilicates. Khim.prom. no.9;660-662 S '63. (MIRA 16:12)

PINSKER, A-Ye.

Production of heating gas from semicoke breeze. Gas.prom. 5 no.11:13-  
16 N '60.  
(Coal gasification)

FINSKER, A.Ye., FEDYUKOV, T.V., CHM.

Removal of explosive ordnance from the hydrogenation  
of coke oven gas by means of polymer binders. 1917. Item  
no. 2196-04. 1917.

PINSKER, A.Ye. [Pinsker, A.IE.]; TSIPIN, A.M. [TSypin, A.M.]

Formation of diethylbenzene in the alkylation of ethyl benzene  
with ethylene. Khim. prom. [Ukr.] no.3:2-10 31-5 '54.

(MIRA 10:12)

PINSKER, A. Ye., Cand Tech Sci -- (diss) "Production of flammable gases in semi-coking furnaces with the application of oxygen draft." Moscow, 1960. 17 pp; 1 page of tables; (Academy of Sciences USSR, Inst of Flammable Minerals, Siberian Division, Eastern Siberian Affiliate of the Academy of Sciences USSR); 150 copies; price not given; (KL 17-60, 158)

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CIA-RDP86-00513R001340920009-3

*OT-P, acids, alkal. with formulae*

*B. 26.*

Applications of electron-diffraction in chemistry. E. G. Jucker  
(*Usp. Akad.*, 1951, **38**, 104-131; *Russ. Phys. Chem. Rev.*, 1951, **7**, 47)  
A review (119 references.) K. B. CLARKE

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CIA-RDP86-00513R001340920009-3"

PHASE I BOOK EXPLOITATION SOV/5903

Pinsker, Aleksandr Petrovich

Primeneniye poluprovodnikovykh generatorov Kholla v avtomatike  
(Application of Semiconductor Hall Generators in Automation)  
Kiyev, Nostekhizdat UkrSSR, 1961. 121 p. 8000 copies printed.

Ed.: A. V. Koval'chuk; Tech. Ed.: L. I. Gorkavenko.

PURPOSE: This book is intended for engineers and technicians engaged in production-process automation and in industrial electronics and radio engineering.

COVERAGE. The book discusses the structure, operating principles, design, and factors affecting the operation of Hall generators. The discussion includes methods of utilizing Hall generators as measuring devices and as elements of automation and radio circuits. No personalities are mentioned. There are 68 references, 23 Soviet, 17 English, and 28 German.

Card 1/8

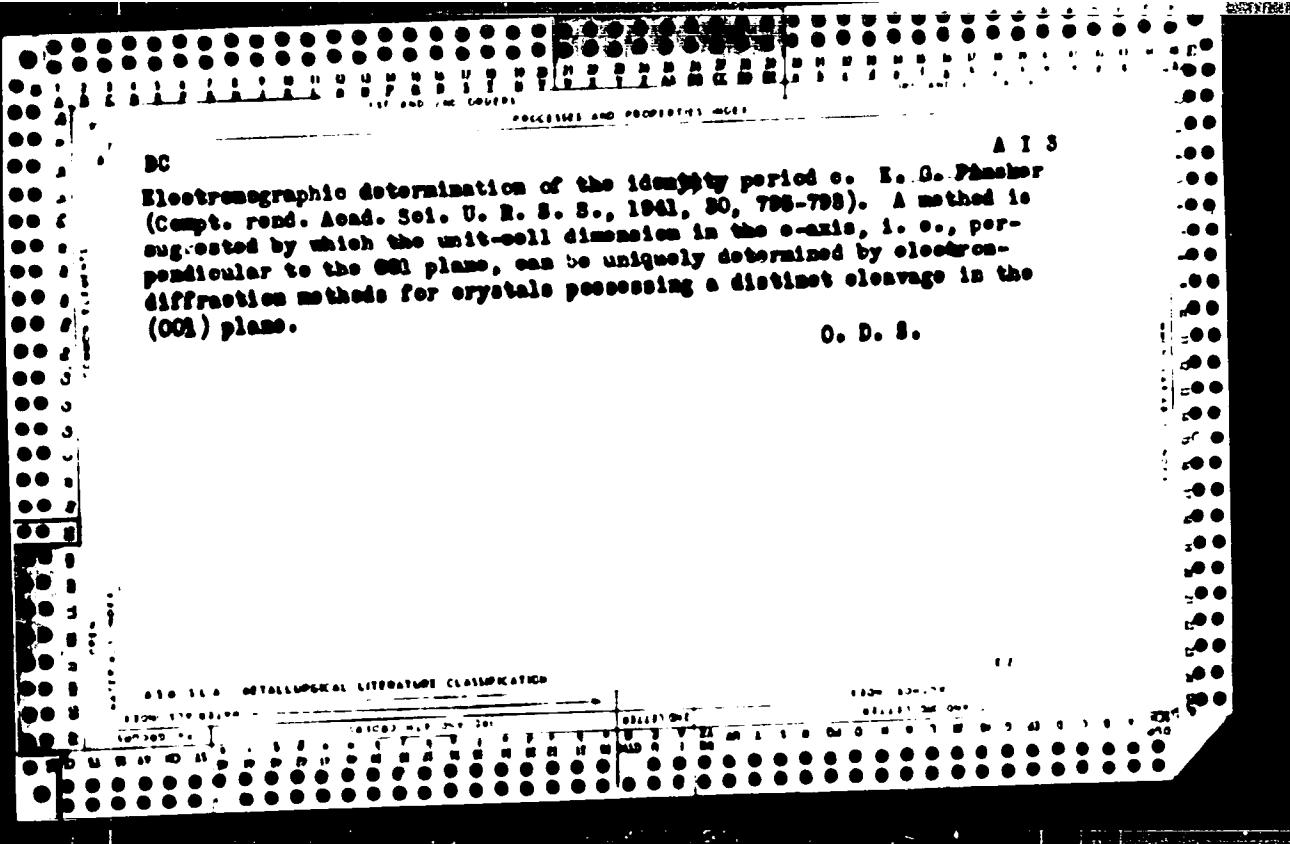
PINSKER, A.Ye.; OGIV, L.L.; KIR'YANOVA, T.V.

Complex purification of the ethylene fraction of coke-oven  
gas by organic solvents. Khim. prom. 41 no.10:777-738 6 '6'.  
(MIRA 18,11)

PODRNICKY, M.; SAVIN, P.; VASILKOV, V.; VASIL'EV, V.;  
VOLKOV, V.; VOLKOV, V.; YANOV, S.; YANOV, S.;  
ZEMSKY, A.; ZEMSKY, A.; ZEMSKY, A.; ZEMSKY, A.;  
ZEMSKY, A.; ZEMSKY, A.; ZEMSKY, A.; ZEMSKY, A.

Centers' inspection of the aircraft by employees of the plant  
entitled "Soviet Union Airlines" and the names of the  
representatives of the plant from whom the aircraft came,  
including the chief engineer.

• Inspection of aircraft at the plant entitled "Aviaexport" V.  
• Inspection of aircraft at the plant entitled "Aviaexport"  
• Inspection of aircraft at the plant entitled "Baltiysk Aviaexport"  
• Inspection of aircraft at the plant entitled "Tolmachevo" Omsk.

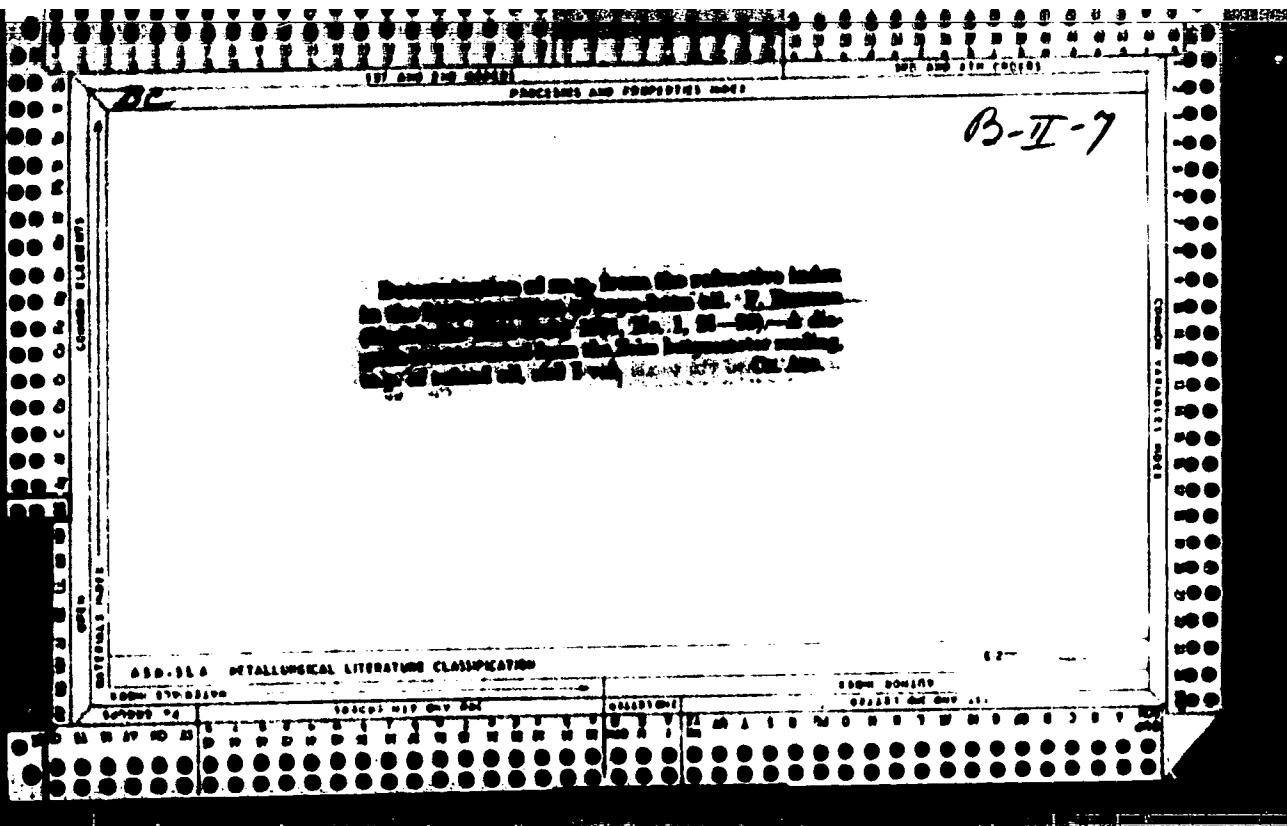


B199 Applications of Electron Diffraction in Chemistry  
In Russian; E.G. Pusker, *Sovetskaya Khimiya, Progress in Chemistry*, v. 20, Jan-Feb 1951, p. 101-131.  
Presents comprehensive, illustrated review of the above. (15 m)

**Electronographic determination of the identity period c.** E. G.  
Ishiker (Compt. rend. Acad. Sci. U.R.S.S., 1961, 60, 793-798)  
A method is suggested by which the unit cell dimension in the c-axis  
(i.e., perpendicular to the (001) plane, can be uniquely determined by  
electron diffraction methods for crystals possessing a distinct  
cleavage in the (001) plane.

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13-II-7

HYDROGENATING FISH AND WHALE OILS. P. Pincher (Maslob. Shir.  
Belo, 1935, 11, 157-159).—Best results were obtained by use of  
alkali-refined oils and a catalyst containing 0.3% Ni, and  
metallocrystallizing at 200° for 3 hr. Active C, kieselguhr, and Cu,  
Fe, and Al dusts served as catalyst carriers.  
Ch. Abs. (p)

ABD 1.8 METALLURGICAL LITERATURE CLASSIFICATION

The determination of the melting point from the refractive index  $n_0^{\text{D}20}$  is the hydrogenation of soy-bean oil. F. PRINSMA, Mededelingen Zijlrederij Drie 1931, No. 1, 21-2. As a rapid method for the determination of the delta of the m.p. is imperative in the control of the hydrogenation of any vegetable oil. F. recommends the use of a diagram plotted on the basis of the following capital data: Zeiss hydrometer reading 31.20, 30.50, 32.00, 34.00, 31.45, 40.10, 47.15, 44.50; m.p. refined oil: 15.20, 19.30, 22.45, 26.60; value m.p. 13.00, 11.75, 14.50, 14.45, 17.50, 16.75, 15.25, 17.15.

Hydrogenating whale and fish oils. N. Prentiss. Mass.  
Lobino Zinnows Dolo 1933, 137 p. Best results in hardening  
whale and fish oils were obtained with alkali-refined  
oil and a purified catalyst contg 0.33% Ni in an auto-  
clave at 200° for about 3 hrs. Tonsil, active C, kiesel

21  
Ch  
guhr, Cu dust, Fe dust and Al dust were used as catalyst  
carriers Julian F. Smith

MASLOV, D. P., kand. tekhn. nauk, dots.; GURIN, F. V., kand. tekhn. nauk, dots.; KUZNETSOV, A. M., inzh.; VASIL'YEV, A. M., inzh.; LYKOV, A. G., inzh., retsepmen; PINSKER, A. L., inzh., red.; LESNICHENKO, I. I., red.; MODEL', B. I., tekhn. red.

[Technology in the motor-vehicle and tractor industry]Tekhnologija avtotraktorostroeniia.[By]D.P.Maslov i dr. Moskva, Mashgiz, 1962.  
432 p.  
(Motor vehicles--Design and construction)  
(Tractors--Design and construction)

(MIRA 16:2)

SOKOLOV, N.F.; PINSKER, A.I.

Problems in the improvement of technical means for producing  
new tractors and agricultural machines. Trakt. i sel'khozmash.  
no.12:28-34 D '58. (MTRK 11:12)

1. Nauchno-issledovatel'skiy institut Traktorosel'khozmash.  
(Agricultural machinery industry)

MASLOV, Dmitriy Petrovich; IGNAT'YEV, Aleksey Kirillovich; PINSKER, A. L.  
inzh., red.; FAL'KO, O.S., red. izd-va; CHERNOVA, Z.I., tekhn. red.

[Technology of the manufacture of the basic parts of tractor engines]  
Tekhnologija izgotovlenija osnovnykh detalei traktornykh dvigatelei.  
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 311 p.  
(MIRA L. 11)

(Tractors- Engines)

BOGENS, K.A.; PINSKER, A.N.

Cleaning of semicoke gas by means of electrostatic precipitators.  
(MIRA 14:1)  
Gaz. prom. 6 no. 1:19-21 '61.  
(Gases—Cleaning)

KOLOMNOV, D.S., kand. tekhn. nauk, doteent; LUZGANOV, V.N., inzh.;  
PINSKER, A.P., kand. tekhn. nauk

Origination of jumps in a circuit with nonlinear inductance.  
Elektrичество no.11:45-46 N '63. (MIRA 16:11)

PINSKER, Aleksandr Petrovich; KOVAL'CHUK, A.V., red.; GORKAVENKO, L.I.,  
tekhn. red.

[Use of transistor Hall generators in automatic control] Primene-  
nie poluprovodnikovykh generatorov Kholla v avtomatike. Kiev, Gos.  
izd-vo tekhn.lit-ry USSR, 1961. 121 p. (MIRA 14:12)  
(Automatic control) (Transducers) (Hall effect)

PINSKER, A.Ye. [Pinsker, A.IE.], kand.tekhn.nauk; MATROSOVA, A.I.

Solubility of carbon disulfide in polyalkyl benzols. Khim.prom.  
(MIRA 17:3)  
[Ukr.] no.1:20-22 Ja-Mr '64.

PINSKER, A.Ye., kand. tekhn. nauk; KRICHMAR, S.I., kand. khim. nauk

Heterogeneous dealkylation of polyethylbenzenes over  
aluminosilicates. Khim. prom. no. 4:255-258 Ap '63.  
(MIRA 16:8)

BOGENS, K.A.; PINSKER, A. Ye.

Preparation of low ash-content tar for electrode coke. Khim.i tekhn.  
top.i masel 6 no.4:49-51 Ap '61. (MIRA 14:3)  
(Coal tar) (Coke)

PINSKER, A.Ye., kand.tekhn.nauk

Thermodynamics of the decomposition reactions of polyethylbenzenes.  
Khim.prom. no.7:486-489 Jl '62. (MIRA 15:9)  
(Benzene) (Alkylation)

LAVROV, N.V., doktor tekhn. nauk; MAKAROV, I.A., kand. tekhn. nauk;  
MIROSHNICHENKO, V.S., inzh.; PEREPKITSA, A.L., kand. tekhn. nauk;  
PINSKER, A.Ye., inzh.; CHERVENKOV, I.I., inzh.

Using oxygen-enriched air in the semicoking of coal. Published  
12 no.2:1-9 '59.  
(Coal--Carbonization) (Oxygen--Industrial applications)

PIONEER-AIR

21(1) 1(1)  
REFERENCES  
Lavrov, N. P., Director of Technical Services, Ministry of Petroleum, Geological Survey, Institute of Geology, Moscow, USSR, "The Influence of Partial Combustion on the Properties of Gasoline," in: "Proceedings of the All-Union Conference on the Use of Oil Products in Partial Combustion of Coal (Pioneering achievements in the use of coal in partial combustion of oil products)," Moscow, 1959, p. 2, pp. 1-9 (1958).

PERIODICAL  
ABSTRACT  
An air-blown engine has been used to study the effect of partial combustion on the properties of gasoline. The results of this study are compared with those obtained by similar experiments with different furnaces in which they tried to use air instead of water. As a result, the gasoline obtained was considerably improved and the octane value increased. A diagram of a multistage furnace for partial combustion of coal is shown in figure 1, and its methods of operation

described. For the purpose of investigating the dependence of the octane number on temperature during the partial combustion of the oil products laboratory experiments with the combustion of kerosene were conducted. The results are listed in Table 1. The investigations were conducted by D. G. Slobodchikov, V. P. Ovsiannikov, and the investigators of the Institute of Petroleum, Moscow, Director: A. A. Bogachev. In addition, the influence exerted by various oxygen compounds on the composition and calorific value of the gas obtained was investigated. The following data were obtained in addition to octane and heat, the calorific value of 2,000 kcal/m<sup>3</sup> is obtained during the partial combustion of coal in multistage shaft furnaces, located on the Donets basin. According to figures 1-7, diagrams of the combustion chambers of 40-50 kcal/kcal, after further treatment of 50-55 and more of gas resulting from the combustion of 4,000 kcal/m<sup>3</sup> kerosene per calorie of the gas obtained does not differ greatly from that of

natural gas under conditions prevailing in West Siberia (Table 4). The oxygen consumption does not exceed 0.05 vols. per cent. in the normal combustion of kerosene. The influence of coal by volume of oxygen (producer gas) (Table 1), and figures 1-7 (diagrams) indicate the technical characteristics of oxygen and air consumption, composition and calorific value of the gas, furnace capacity, etc. with various additions of oxygen. There are 4 figures, 4 tables, and 16 separate references.

Card 1/5

Card 2/5

BOGDANOV, I.F.; LAVROV, N.V.; MAKAROV, I.A.; PINSKER, A.Ye.; CHERNENKOV, I.I.

Possibility of obtaining synthesis gas in semicoke-producing ovens using an air blast enriched with oxygen.  
Gas. prom. 4 no.11:18-22 '59. (MIRA 13:2)  
(Gas manufacture and works)

KULIYEV, A.M.; ALEKPFROV, G.Z.; PINSKER, B.A.; GRIGORYAN, F.V., BROVCHENKO T.P.

Separation of natural gas in a consolidated laboratory set-up.  
Gaz. prom. 9 no.1:51-54 '64.

MFA [?]

PINSKER, B.A.

GRIGORYAN, Kh.A.; GORELIK, M.A.; ALIYEV, Z.B.; PINSKER, B.A.; USYNINA, T.P.

Producing furnace black from gas rich in air by enriching the  
gasoline liquid hydrocarbons. Sbor. trud. Akad. Nauk SSSR no. 2: 362-372  
Ag '58. (MIRA 12:6)

(Carbon black)

KULIYEV, Al.M.; PINSKAR, B.A.; BROVCHENKO, T.P.

Lower adsorption capacity of activated coal as a result of the  
polymerization of acetylene on its surface. Azerb.khim.zhur.  
no.3:31-35 '60. (MIRA 14:8,  
(Acetylene) (Carbon, Activated)

KULIYEV, Al.M.; PINSKER, B.A.; AGAKISHIYEV, N.A.; GRIGORYAN, E.V.

Using silica gel as an adsorbent for separating saturated  
and unsaturated hydrocarbons in refinery gases. Azerb.  
neft. khos. 40 no.1:36-37 Ja '61. (MIRA 14:8)  
(Gases—Separation)  
(Silica)

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3

SECRET

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3"

KULIYEV, AI.M.; AGARICHIYEV, N.A.; PINSKII, B.A.

Temperature effect on the absorption capacity of fine-grained  
coals and silica gel. Azerb. khim. zhur. no.4:33-36 (1974).  
(MIRA 18:3)

KUL'YEV, V. V.; ANTON KUL'YEV, N. A.; PINSKER, B. A.

Measurement of main head gasol in from the surface of the water under increased pressure. Gaz. press. 11 no. 484-51 1946.  
(MITI 1946)

GRIGORYAN, Kh.A.; KULIYEV, Al.M.; ALIYEV, Z.E.; PINSKER, B.A.

Investigation of the process of separation of gases in the  
fluidized bed of an adsorbent. Sbor.trud. Az NII NP no.4:251-71  
'59. (MOMA 15:5)  
(Gas—Separation)

S/081/62/CCC/023/017/120  
B156/B186

AUTHORS: Kuliyev, Al. M., Pinsker, B. A., Brovchenko, T. P.,  
Agakishiyev, N. A.

TITLE: Adsorbing power of silica gel reduced by polymerization of  
acetylene at its surface

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 117, abstract  
23B056 (Azerb. khim. zh., no. 6, 1961, 105 - 108 (summary in  
Azerb.))

TEXT: The decrease in the adsorbing activity of silica gel resulting  
from the polymerization of acetylene at its surface has been investigated.  
It is proved that an adsorbent of consistent activity can be produced by  
treating silica gel with HCl. [Abstracter's note: Complete translation.]

Card 1/1

KULIYEV, Al.M.; PINSKER, B.A.; BROVCHENKO, T.P.; AGAKISHIYEV, N.A.

Decline of the adsorptive capacity of silica gels caused by  
the polymerization of acetylene on its surface. Azerb.khim.zhur.  
(MIRA 15:4)  
no.6:105-108 '61.  
(Silica) (Adsorption) (Acetylene)

GRIGORYAN, Kh.A.; ALIYEV, Z.B.; KULIYEV, Al.M.; PINSKEE, B.A.; AGAKISHIYEV, S.A.

Studying the free flow of granular materials from processing apparatus. Azerb. neft. khoz. 39 no.6:35-38 Je '60.

(MIRA 13:10)

(Granular materials)

GRIGORYAN, Kh.A.; KULIYEV, Al.M.; ALIYEV, Z.E.; PINSKER, B.A.

Investigating the drop in the adsorptive capacity of activated carbon as a result of the polymerization of hydrocarbons on its surface. Sbor. trud. AzNII MP no.2:325-345 Ag '58.

(MIRA 12:6)

(Carbon, Activated) (Hydrocarbons)

GRIGORYAN, Kh.A.; KULIYEV, Al.M.; PINSKER, B.A.

Drop in the adsorptive capacity of silica gel resulting from  
polymerisation of propylene on its surface. Azerb.neft.khoz.  
37 no.10:33-35 0 '58. (MIRA 12:2)  
(Silica) (Propene)

26877  
S/081/61/000/013/010/028  
B110/B205

15 6070

AUTHORS: Kuliyev, Al. M., Pinsker, B. A., Brovchenko, T. P.

TITLE: Decrease of the adsorptive capacity of activated carbon due to polymerization of acetylene on its surface

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1961, 51C, abstract 13M139 (Azert. khim. zh., 1960, no. 1, 31-'5)

TEXT: Laboratory tests have shown that at a contact time between C<sub>2</sub>H<sub>2</sub> and activated carbon of 25 sec and an operation time of 1-1.5 months, the activity of AP3(ARZ) carbon is reduced by 10%, and that of CKT(SKT) carbon by 20-25%. The decrease in activity can be reduced by 50-60% if C<sub>2</sub>H<sub>2</sub> and carbon are kept in contact only for 12 sec. [Abstracter's note: Complete translation.]

Card 1/1

On a method of production of monocrystalline films of semiconductors.  
S. A. Semiletov.

Preparation, structure, and some properties of monocrystalline layers  
of lead selenide. S. A. Semiletov, I. P. Voronina.

On a method of preparation of thin films of indium antimonide of  
stoichiometric composition. P. S. Agalarzade, S. A. Semiletov,  
E. G. Pinkar.

New phases in the system gallium-tellurium. V. V. Vlasov, S. A. Semiletov.

Some questions on the crystal chemistry of semiconductors with the  
structure of bismuth telluride. S. A. Semiletov.  
(Presented by S. A. Semiletov--20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,  
Kishinev, 16-21 Sept 1963

PINSKER, G.M. [Pinaker, H.M.] (Kiyev

Effect of the eccentricity of force application on the value  
of limiting load of a frame. Prykl. mekh. 10 no.3:285-290 '64.  
(MIRA 17)

1. Institut mekhaniki AN UkrSSR.

PINSKER, G.Z.; FARMAKOVSKAYA, G.I.

Structure of  $4\text{PbO}\cdot\text{PbSO}_4$ . Kristallografiia t no.2:268-269  
Mr-Ap '61. (MIRA 1-9)  
(Lead compounas) (Electron diffraction examination)

PINSKER, I. P.

According to Inventor Award No. 1322, of the USSR (1888-41) 1951, the following report at the seminar of the Laboratory of Machine and Instrument Design in the Institute of Machine Science, Academy of Sciences of USSR in 1952 and the first half of 1953.

I.P. Pinsker read a report on the subject "Construction of functions of a calculation, the method of successive differentiation." The author suggested a practical method of electric and mechanical modelling of functions with two or more variables given in the form:

SO: St Brit, Min of Defence, ISI Trans #38, May 54, Unclass.

*PINSKER, I. S.*

Pinsker, I. S. Approximate design of mechanisms with lower pairs. Akad. Nauk SSSR, Trudy Sem. Teorii Mekhanizmov 5, no. 18, 34-83 (1948). (Russian) A synthetic procedure of successive approximations is presented with all the trappings of modern mathematical rigor. Only a rough sketch of it, leaving out the precise assumptions, can be given here. The concept of curve distance is codified first. Each of two curve families,  $a(x, y; r_i) = 0$  and  $b(x, y; r_i) = 0$ , cover a domain of operations simply, as does a family,  $(R)$  of straight lines (of azimuth  $\phi$ ). The distance is defined as the maximum length of the  $R$  segments between the curves in question, and is shown to be approximated by the (invariant) expression,  $\Phi = \alpha/A + \beta/B$ ,  $A = a_1 \cos^2 \phi + a_2 \sin \phi \sin \phi + a_3 \sin^2 \phi$ ,  $B = b_1 \cos \phi + b_2 \sin \phi$ , the error being bound by an expression in  $a, A$ ,

$$a_1 \cos^2 \phi + 2a_2 \cos \phi \sin \phi + a_3 \sin^2 \phi,$$

Source: Mathematical Reviews.

etc. The quantity used as the measure of deviation is  $[\Phi] = \max \Phi$  for a given set of  $r_i$ . If, for a choice of  $r_i = r_{i0}$ ,  $[\Phi_0] \geq q$ , where  $q$  is the acceptable error, put  $F_1 = \Phi_0 + \sum (\partial \Phi / \partial r_i) \phi_i$  and determine  $\phi_i$  so that  $[F_1] \leq [\Phi]$  at  $r_{i0} + \phi_i$ . Then, as is shown,  $\lambda$  can be found so that  $[\Phi_0(r_{i0} + \lambda \phi_i)] \leq [\Phi(r_{i0})]$ . This procedure is iterated until some  $[\Phi(r_{i0})] \leq q$ . The determination of the  $\phi_i$  may turn out to be involved enough to warrant replacing  $[F_1] \leq [\Phi_0]$  by one of these conditions: (a)  $F_1$  is small; (b)  $F_1$  vanishes at a number of points; (c) the least-square deviation of  $F_1$  from zero is a minimum, for a set of points. The algebra involved is presented for the two last cases. The application of these procedures to linkages is generously illustrated, in complete numerical detail, for a number of four-bar linkage design problems.

A. W. Wundheiler (Chicago, Ill.).

Vol. No. 1

EDVARD, I. Sh., Engineer

"On the Possibility of Using Mechanisms with Low Complexes in Planning Elements for  
Computing Machines." Thesis for degree of Sci. Technical Sci. Ser. of Sci.,  
Ministry of Lenin Krasin. Institute of Scientific Service of Central Bank.

Summary, Title 5, Dissertation Presented For Degree In Science, Institute of Sci.  
of Central Bank. Prof. V. V. Vaynshteyn, Vice-Doc. Tadzh.

PINSKER, I. Sh.

Pinsker, I. Sh. Selection of a four-hinge linkage from a  
specification of curves. Akad. Nauk SSSR. Trudy Sem.  
Teorii Malin i Mehanizmov 9, no. 33, 18-28 (3 plates)  
(1950). (Russian)

This paper advocated a procedure of graphical interpolation for the determination of a four-hinge linkage nearly generating a given function as the angle  $\psi$  of one crank, the angle  $\varphi$  of the other crank being the independent variable. An atlas of  $(\varphi, \psi)$  curves (attached to the paper) is constructed for linkages whose bar-lengths are in the ratios  $i_1:i_2:i_3:i_4$ , the  $i$  numbers running through the integral values 1, 2, 3, 4 and at least one of them being equal to 4. Certain five permutations of the  $i$ 's lead to functions obtained by linear transformations ( $T$ ) of  $\varphi$  and  $\psi$  (reflection at the  $\varphi = \psi$  line, at the  $\varphi$  axis, etc.). It is thus sufficient to

consider at most four permutations of a given set of  $i$ 's when constructing the atlas. The given curve is drawn to several scales on transparent paper ( $P$ ), and each of these plots subjected to the five transformations ( $T$ ). Then the paper is laid over the atlas, face up or down, and with the first bisectants (on the paper and the atlas) parallel with the same, or opposite senses. If satisfactory coincidence with a curve  $i_1i_2i_3i_4$  is observed, the manner of application of ( $P$ ) determines the proper permutation of the  $i$ 's defining the linkage, and other obvious data determine the initial points of the  $\varphi$  and  $\psi$  scales and their units. A complete numerical example is given (for  $y=x^2$ ), and the error estimate method indicated by a reference to a former paper [same Trudy 5, no. 18, 34-83 (1948); these Rev. 12, 295].

A. W. Wundheiler (Chicago, Ill.)

Source: Mathematical Reviews,

Vol. 12 No. 7

SPR 22

PINSKER, I. Sh.

*460*  
Novodvorski, E. P., and Pinsker, I. S. The process of equating maxima. Uspeshni Matematicheskikh Nauk (N.S.) 6, no. 6(46), 174-181 (1951). (Russian)

The authors establish the validity of a process, attributed to Ya. L. Remez, for constructing the function of a given class which deviates least from a given function. The class is required to have the following properties: it consists of functions  $\Delta(t)$  continuous on a closed interval, such that (a) two functions are identical if they coincide at more than  $n$  points (a double zero of the difference counting twice), (b) a function of the class is determined when its values at  ~~$n+1$  points~~ are assigned and depends continuously on the points.

R. T. Rund, Jr., Evanston, Ill.

Source: Mathematical Reviews,

Vol. 16, No. 1

*SMW* *gj*

SOV 124 58 8 84/2

Translation from: Referativnyy zhurnal Mekhanika, 1958, Nr 8, p 11 (USSR)

AUTHOR: Pinsker, I Sh.

TITLE: Designing a Function-generator Unit by the Method of Successive Compensation (Proyektirovaniye postroitel'ya metodom posledovatel'noy kompensatsii)

PERIODICAL: Tr. Seminara po tochnosti mekhanizmov i mashin. In-t mashinoved. AN SSSR 1954, Nr 7, pp 3-38

ABSTRACT: By a function generator unit the author means a device (mechanical, electrical, etc.) the input of which consists of the arguments  $x_1, \dots, x_n$  and which yields an output consisting of a given function thereof  $z = z(x_1, \dots, x_n)$ . An interpolation method is proposed for designing function-generator units with but a small structural error. As examples of devices which reproduce a function of two variables, certain mechanical devices (a differential gear, a hinged seven-link mechanism, and a multiplying mechanism) and electrical devices are examined. A case involving three variables is dealt with briefly. It is pointed out in conclusion that the method can also be used in the selection of empirical formulae for the drawing of certain nomograms. Bibliography: 6 references

M A Ayzerman

Card 1 1

PINSKER, I. S.

Pinaker, I. S. On the construction of functions deviating least from zero. Doklady Akad. Nauk SSSR (N.S.) 93, 21-24 (1954). (Russian)

The classical theorems of Chebyshev on functions (of one real variable) of a given form which deviate least from zero have been extended to a much more general class than the original linear combinations formed from a prescribed sequence [see, e.g., Morozov, Izvestiya Akad. Nauk SSSR. Ser. Mat. 16, 75-100 (1952); these Rev. 13, 728]. Here the author lays down appropriate definitions and announces corresponding theorems for functions of several variables.

R. P. Boas, Jr. (Evanston, Ill.)

PINSKER 1 Sh

25(2); 16(0)

PHASE I BOOK EXPLOITATION

SOV/2594

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyenii i priborostroyenii

Trudy, vyp. 8 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on Accuracy in Machinery and Instrument Design; No. 8) Moscow, Izd-vo AN SSSR, 1955. 78 p. 1,800 copies printed.

Ed. of Publishing House: V.V. Pobedimskiy; Tech. Ed.: Ye.V. Makuni; Editorial Board: N.G. Bruyevich, Academician (Resp. Ed.); G.G. Baranov, Doctor of Technical Sciences; M.L. Bykhovskiy, Candidate of Technical Sciences; A.P. Vladziyevskiy, Candidate of Technical Sciences, I.Ye. Gorodetskiy, Doctor of Technical Sciences; and A.S. Shatalov, Doctor of Technical Sciences.

PURPOSE: The collection of papers is intended for scientific research workers, engineers, and designers.

COVERAGE: This collection of articles deals with the following topics: an application of the principle of virtual displacements in kinematics, accumula-

Card 1/4

Transactions (Cont.)

SOV/2594

tion of errors in gear trains, design of a wire-rope drive, interpretation of functions with many variables by using adding, multiplying, and simplest functional units, form inspection of circular parts, and design of gyroscopic verticals for accuracy. No personalities are mentioned. References follow several of the articles.

## TABLE OF CONTENTS:

Lynbator, Yu.V. Application of the Principle of Virtual Displacements in the Determination of Scalar Errors in Positions of Mechanisms

3

The effect of linear and angular errors on the ratio of a mechanism is investigated by using the principle of virtual displacements. The mechanism is assumed to be in equilibrium under a certain imaginary loading. The use of the method is illustrated by several examples. The method can also be applied to planar and space mechanisms with lower and higher pairs.

Partenskiy, B.M. On the Problem of Accumulating Errors of Tooth Gears in Gear Trains

18

Card 2/4

Transactions (Cont.)

SOV/2594

The article explains the possible ways in which the accumulation of errors of single gears in a gear train can occur. Simple formulas which can be used as criteria are presented.

Sergeyev, V.I. Design of a Wire Rope Transmission for Accuracy

26

Specific features of design for accuracy are discussed, and formulas for calculating errors for a single transmission and for a number of transmissions of the same design are presented. The effect of thermal expansion is also discussed.

Pinaker, I.Sh. Presentation of Functions of Many Variables by Using Adding Multiplying, and the Simplest Functional Devices

35

The author presents a number of methods for expanding a given function into different combinations of functions with one or one and two variables. The methods are applicable to cases in which the given functions have two and three variables. Adders, multipliers, and simple functional devices are used.

Fil'kin, V.P. Problem of Inspection for Roundness of Parts of Circular Cross Section

52

Card 3/4

Transactions (Cont.)

SOV/2594

This article discusses checking geometrical errors in round parts by the two-  
and three-point method with different angles of contact.

Sergeyev, V.I. Some Problems in Designing Gyroscopic Verticals for Accuracy 64  
The effect of moments to which a gyroscopic vertical is subject and which  
affect its characteristics are discussed. Formulas derived permit the calcu-  
lation of mathematical expectations and the range of angles of precession for  
gyroscopic verticals with linear correction, as well as free ones.

AVAILABLE: Library of Congress

GO/jb  
12-19-59

Card 4/4

PINSKER, I. Sh.

I. Sh. Pinsker, "The Design of Optimum Mechanisms by Tchebischew's Method  
for the Generation of a Function of one or more Variables."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the  
Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958

3(4)

AUTHORS: Kherol, L. M., Candidate of Technical Sciences, Director, Institute  
Candidate of Technical Sciences

Soviet-4-17

TITLE: On the Solution of the Extrapolation-Problem and Its Connection  
With the Root-mean-square Approximation (O reshenii zadachi  
ekstrapolyatsii i yeye svyaz' so srednekvadratichnym priblizheniem)

PERIODICAL: Izvestiya vysshikh uchebnykh zavodov i aeroflota.  
yemka, 1959, Nr 4, pp 35 - 42 (SUD)

ABSTRACT: In the observation of arbitrary but not casual processes in a  
number of cases it is possible to obtain measurement results in  
the form of causal time functions owing to the causal character  
of measurement errors. According to the measurement results which  
form the sum of the actual process and the causal error, the  
process can be fixed on a certain period of time in advance, which  
means that the problem of extrapolation which is connected with  
the filtration can be solved. The result, however, fundamentally  
depends on how the extrapolation is determined. It is supposed  
that the measurement results of process  $x(t)$  in an interval

Card 1/4

On the Solution of the Extra, ration-ir-scheme It's  
Connection With the Root-mean-square Approximation

$-\tau \leq t \leq 0$  are known; besides, it must be known that  $x(t)$  is a function from a certain indefinite class of continuous functions (e.g. from a linear combination of given functions  $\varphi_1(t), \varphi_2(t), \dots, \varphi_p(t)$ ). Value  $x^*(T)$  which is extrapolated for a time  $T$  in advance, is often determined by formula as such a linear combination of measured values  $y(t_k)$ , which shows no systematic error and if  $\tau < T$ , the difference  $x(T) - x^*(T)$  is reduced to a minimum. But in fact, the measurement results of a curve of the same given class can be used in a better approximation to the measurement results in interval  $-\tau \leq t \leq 0$  can be approximated and the extrapolated value can be determined as a value of this approximated function in the respective future date. This shows in which cases the solutions of the extrapolation problem, obtained in such different ways, will correspond to each other. It is supposed that the measurement results  $y(t_k)$  of a certain non-causal process are known at distinct points  $t_k$  ( $k = 0, 1, \dots, n$ ;  $-\tau \leq t_k \leq 0$ ). For this (21) is derived for  $x^*(T)$  and formula (22) for the minimal error result.

Card 2/4

On the Solution of the Extrapolation-Problem and Its  
Connection With the Root-mean-square Approximation

SCV/154-5-4-4<sup>17</sup>

D of the extrapolation error. Various possible cases are investigated. A general solution of the extrapolation problem is obtained. This solution grants a minimum of dispersion for the error of a finite number of measurements  $j(t_k)$  which contain errors with the given correlation function  $k(t_k, t_1)$ . In arbitrary linear combinations of linear independent functions  $\varphi_1(t), \dots, \varphi_r(t)$  the solution contains no systematical errors. There it was found that if the determinant of the solution matrix  $\|k(t_k, t_1)\|$  is not equal to zero and the system of the proper functions of the operator  $k$ , which corresponds to correlation function  $k(t_k, t_1)$ , is a perfect one - the solution is plain and agrees with the value of function  $F(t)$ . Function  $F(t)$  is the best root-mean-square approximation to the measurement results in the metric of space  $R_2$ . According to the assumption of a metric space  $L$  stands for space  $R_2$ .  $k(t_k, t_1)$  is a known correlation function. (Abstractor's note: The correlation function twice mentioned in the original document is not as

Card 3'4

On the Solution of the Extrapolation-Problem and Its  
Connection With the Root-mean-square Approximation

SOV/15A- - - 107

$\gamma(t_k, t_j)$  and  $\gamma(t_k, t_1)$ , perhaps a midpoint.  
There are 5 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy institut poletnoj geodesii, aerofotogrammetrii i  
kartografii (Moscow Institute of Aviation, Aerial Survey and  
Cartographic Engineers)

SUBMITTED: October 20, 1970

Card 4/4

PHASE I BOOK EXPLOITATION SOV/5617

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po  
tochnosti v mashinostroyenii i priborostroyenii.

Trudy. vyp. 15 (Transactions of the USSR Academy of Sciences.  
Institute of Machine Science. Seminar on Accuracy in Machine  
and Instrument Manufacture. no. 15) Moscow, Izd-vo AN SSSR,  
1961. 93 p. Errata printed on the inside of back cover.  
2,300 copies printed.

Editorial Board: Resp. Ed.: N. G. Bruyevich, Academician, G. G.  
Baranov, Doctor of Technical Sciences, M. L. Bykhovskiy,  
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M. I. Kochenov, Candidate of Technical Sciences, Yu. V. Lyubatov,  
Candidate of Technical Sciences, D. N. Reshetov, Doctor of Tech-  
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and A. S. Shatalov, Doctor of Technical Sciences; Ed. of Publish-  
ing House: Yu. G. Drobyshev; Tech. Ed.: Yu. V. Rylina.

Card 1/4

Transactions of the USSR (Cont.)

SOV/5617

PURPOSE : This collection of articles is intended for engineers, designers, and research workers interested in the improvement of accuracy in machine and instrument manufacturing.

COVERAGE: The dynamic properties of centrifugal drum- and cone-type governors for electric motors are discussed. Problems are reviewed concerning accuracy in automatic dimensional control, computer adjustment, parts machining, and the distribution of dimensional errors along turbine blades. The practicability of automating computer adjustments and certain problems in constructing electronic-computer adjusting elements are considered. Conclusions concerning the results of the investigations are presented in some of the articles. No personalities are mentioned. References accompany each article. There are 42 references: 41 Soviet and 1 English.

TABLE OF CONTENTS:

Sergeyev, V. I. The Dynamics of a Centrifugal Drum-Type Governor  
[Reported Feb. 24, 1958]  
Card 2/4

## Transactions of the USSR (Cont.)

SOV/5617

Balakshin, O. B. The Development and Investigation of Methods  
for Increasing the Accuracy of Pneumatic Devices for Automatic  
Dimensional Control [ Reported March 3, 1959]

13

Matevosyan, P. A. Certain Problems in the Construction of Elec-  
tronic-Computer Devices for Algebraic Equations [ Reported  
April 14, 1959]

34

Pinsker, I. Sh., and A. Ye. Dorogov. Proper Selection of the  
Adjusting Element and the Effect of Measurement Errors on Ad-  
justment Accuracy [ Reported April 5, 1960]

45

Dorogov, A. Ye. On Possibilities for the Improvement and Auto-  
mation of Computer Adjustment Processes [Reported April 5, 1960]

56

Fridlender, I. G. Criteria and Methods for Evaluating the  
Accuracy of Parts Machining [ Reported April 26, 1960]

68

Fridlender, I. G. Laws of Distribution of Dimensional Errors  
for Gas-Turbine Blades [Reported April 26, 1960]

76

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"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3

FINSKER, I.Sh. (Moskva)

Selection of a maximal system of constraints. Avtom. i vystrel. '66  
no.9:1553 1562 S 165.

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3"

L 8200-66 EWP(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)  
ACC NR: AP5023115 SOURCE CODE: UR/0103/65/026/009/1553/1562

AUTHOR: Pinsker, I. Sh. (Moscow)

ORG: none

TITLE: Choice of a maximum system of constraints

SOURCE: Avtomatika i telemekhanika, v. 26, no. 9, 1965, 1553-1562

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory 14

ABSTRACT: The choice of the maximum number of constraints which still permits solving a problem of (linear or nonlinear) programing or function approximation is theoretically considered. The constraints are put in a definite order, and a multivariable control vector meeting a maximum number of the first constraints is sought. An alternance of a certain point in a n-dimensional

UDC: 519.82 / 83

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L 8200-66  
ACC NR: AP5023115

O

Euclidean space is found and used for setting up an algorithm. The latter serves as a basis for finding the next-point alternance, and so on, until the threshold point coincides with the initial point of the trajectory; this condition solves the problem. A numerical example illustrates the application of the method. Orig. art. has: 2 figures, 35 formulas, and 3 tables.

SUB CODE: 09, 13 / SUBM DATE: 24Apr64 / ORIG REF: 005

Cord 2/2  $\rho_w$

VISHNEVSKIY, A.A.; SHIK, V.V.; KHN, L.M.

Theoretical analysis of the effectiveness of operation of interarterial anastomoses in tetralogy of Fallot. eksper.  
khir. i anest. 9 no.6:3-14 N-I '64. (M 54 12; 7)

1. Institut khir. i anest. A.V.Vishnevskogo. direktor -  
deystvit'nyy senen. s. i. prof. A.A.Vishnevskiy  
"oszva.

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3

PINSKER, I.Sh., TOPYEVIN, B.M.

Creation of an electronic prototype using a modified VMEbus  
search. Avtom. Sist. i Tekhn. no. 5(2) 1987. p. 10-12.  
MIRA 17 CO/

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3"

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3

PINCHIK, I.Sn. (Moskva)

The alternate method. Autom. 11-17. Ch no. 3. 30-311-17-12.  
(1951-1956)

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001340920009-3"

ACCESSION NR: AP4033353

S/0103/64/025/003/0302/0311

AUTHOR: Pinsker, I. Sh. (Moscow)

TITLE: Alternance method (a solution of the nonlinear-programming problem)

SOURCE: Avtomatika i telemekhanika, v. 25, no. 3, 1964, 302-311

TOPIC TAGS: alternance, programing, nonlinear programing, automatic control,  
nonlinear automatic control, optimum automatic control

ABSTRACT: Constraints cause complications in searching for an optimum system even in the case of a very simple structure of the estimating function (estimator). The result of searching is regarded as a compromise between negative values of the constraint contradictions (discrepancy) and low values of the estimator. Such a compromise can be found by considering an "alternance," which is a minimum set of contradictory requirements. The alternance method is proposed for searching for a nonlinear-estimator minimum when constraints may

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ACCESSION NR: AP4033353

also be nonlinear. The solution consists of the successive performance of these two operations: (1) setting up an alternance and (2) modifying system parameters in such a way that the principal requirements of alternance are satisfied tolerating an increase in the estimator. Orig. art. has: 24 formulas.

ASSOCIATION: none

SUBMITTED: 13May63 DATE ACQ: 15May64 ENCL: 00

SUB CODE: DP , IE NO REF SOV: 005 OTHER: 000

Card 2/2

PINSKER, I.Sh. (Moskva); TSEYTLIN, B.M. (Moskva)

Nonlinear problem of optimization. Avtom.i telem. 23 no.12:1611-  
1619 D '62. (MIRA 15:12)  
(Automatic control)

S/103/62/023/012/CC3/011  
D201/D308

AUTHORS:

Pinsker, I.Sh. and Tsaytlin, V.M. (MOSCOW)

TITLE:

A non-linear optimization problem

PERIODICAL:

Avtomatika i telemekhanika, v. 23, no. 12,  
1962, 1611 - 1619

TEXT: The authors consider one particular method of optimization of a system, the estimating function of which depends on several parameters. The method is called the method of independent optimization steps. The method consists in determining the minimum of this function along a straight unidimensional line and in recommendations as to the choice of a new straight line, a set of fundamentally differing lines being constructed during the process. When the estimating function is quadratic, the directions of all lines are conjugate and optimization is carried out in a finite number of steps. The expressions for the time of changing over from one trajectory to another and that for the required

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A non-linear ...

S/103/62/C23/012 '003/C11  
D201/D308

magnitude of the optimization steps (which decrease as the minimum is approached) are given. The method is illustrated by an example of optimizing a system described by a linear differential equation of the third order by means of determining, in the domain of parameters  $a_1$ ,  $a_2$ ,  $a_3$ , the minimum of estimating function  $\Phi$ . There are 1 figure and 1 table.

SUBMITTED: June 10, 1962

Card 2/2

PINSKER, I.Sha.

Adjustment by means of minimum turns of elements. Trudy Inst.  
mash.Sem.po toch.v mash.i prib. no.16:44-50 '61. (MIRA 15:2)  
(Matrices)

L 25779-65 EMT(d)/EPP(n)-2/EPP(1)  $P_{k-1}/P_k-1/P_1-1/P_0-1/P_0-1/P_{k-1}$  LJP(o)

WW/BO

ACCESSION NR: AT4045213

5/2888/84/000/006/0213/0231

AUTHOR: Pinsker, I. Sh.; Tseytin, B. M.

TITLE: Solution of a problem of optimization by the method of independent search

SOURCE: Avtomaticheskoye upravleniye i vychislitel'naya tekhnika, no. 6, 1964,  
213-231

TOPIC TAGS: optimization, numerical analysis, functional, least squares method,  
algorithm, approximation

ABSTRACT: The present paper describes a general algorithm for determining the parameter values at which an abstract system is working optimally, where optimality is defined in terms of certain numbers which are descriptive of system operation being at a minimum. The descriptive numbers can be linear functionals, integrals, least-squares estimates, absolute deviations from specified values, etc. The algorithm chooses an initial state vector at random,  $x^*(x_1^*, \dots, x_n^*)$ , and calculates the descriptive value  $I(x^*)$ . By a linear interpolation, a corrected vector  $x'(x^*, I')$  is constructed and a new value  $I(x') = I'$  is computed. For each new  $x'$ , the value of  $I'$  is less than the value of  $I^{*-1}$ . The process halts when no change in  $I'$  is achieved. The paper presents the calculation

Cord 1/2

L 25779-65

ACCESSION NR: AT4045212

appropriate to each stage of the iteration. Orig. art. has: 8 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, MA

NO REF Sov: 004

OTHER: 000

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